NAME Key DATE _____ PERIOD ____

7-1 Skills Practice

Geometric Mean

Find the geometric mean between each pair of numbers. State exact answers and answers to the nearest tenth.

1. 2 and 8 $\frac{2}{x} = \frac{x}{8}$ $x = 4$

2. 9 and 36 $\frac{9}{x} = \frac{x}{36}$ $x = 18$

3. 4 and 7 $\frac{9}{x} = \frac{x}{7}$ $x = 2\sqrt{7}$

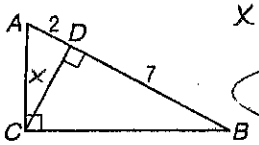
4. 5 and 10 $\frac{5}{x} = \frac{x}{10}$ $x = 5\sqrt{2}$

5. $2\sqrt{2}$ and $5\sqrt{2}$ $\frac{2\sqrt{2}}{x} = \frac{x}{5\sqrt{2}}$ $x^2 = 20$ $x = 2\sqrt{5}$

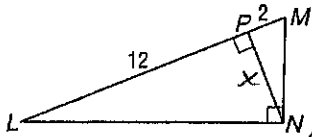
6. $3\sqrt{5}$ and $5\sqrt{5}$ $\frac{3\sqrt{5}}{x} = \frac{x}{5\sqrt{5}}$ $x = 5\sqrt{3}$ $x^2 = 15 \cdot 5$

Find the measure of each altitude. State exact answers and answers to the nearest tenth.

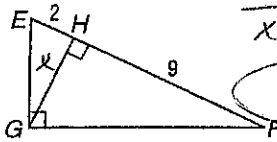
7. $\frac{2}{x} = \frac{x}{7}$ $x = \sqrt{14}$



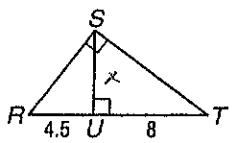
8. $\frac{12}{x} = \frac{x}{2}$ $x = 2\sqrt{6}$



9. $\frac{2}{x} = \frac{x}{9}$ $x = 3\sqrt{2}$

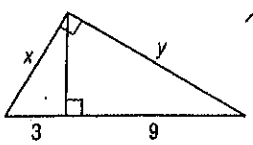


10. $\frac{4.5}{x} = \frac{x}{8}$ $x = 6$

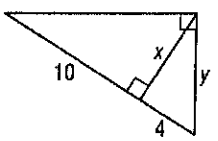


Find x and y.

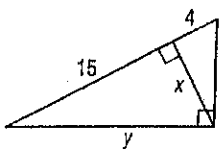
11. $\frac{3}{x} = \frac{x}{12}$ $x = 6$ $\frac{9}{y} = \frac{y}{12}$ $y = 6\sqrt{3}$



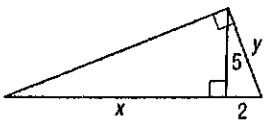
12. $\frac{10}{x} = \frac{x}{4}$ $x^2 = 40$ $x = 2\sqrt{10}$ $\frac{4}{y} = \frac{y}{14}$ $y = 2\sqrt{14}$



13. $\frac{15}{x} = \frac{x}{4}$ $\frac{15}{y} = \frac{y}{19}$ $x = 2\sqrt{15}$ $y = \sqrt{285}$



14. $\frac{x}{5} = \frac{5}{2}$ $2x = 25$ $x = 12.5$ $\frac{2}{y} = \frac{y}{14.5}$ $y^2 = 29$ $y = \sqrt{29}$



Lesson 7-1

NAME _____ DATE _____ PERIOD ____

7-1 Practice

Geometric Mean

Find the geometric mean between each pair of numbers to the nearest tenth.

1. 8 and 12

$\frac{x}{8} = \frac{12}{x}$

$x = 4\sqrt{6}$

2. $3\sqrt{7}$ and $6\sqrt{7}$

$\frac{3\sqrt{7}}{x} = \frac{x}{6\sqrt{7}}$

$x^2 = 126$

$x = 3\sqrt{14}$

3. $\frac{4}{5}$ and 2

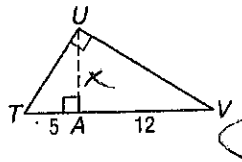
$\frac{4/5}{x} = \frac{x}{2}$

$x^2 = 1.6$

$x = \sqrt{1.6} \approx 1.3$

Find the measure of each altitude. State exact answers and answers to the nearest tenth.

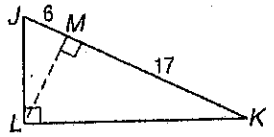
4.



$\frac{5}{x} = \frac{x}{12}$

$x = 2\sqrt{15}$

5.

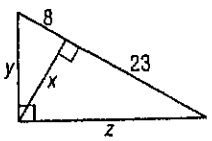


$\frac{6}{x} = \frac{x}{17}$

$x = \sqrt{102}$

Find x, y, and z.

6.

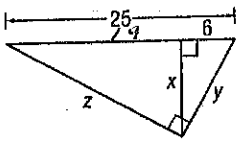


$\frac{8}{x} = \frac{x}{23}$ $x = 2\sqrt{46}$

$\frac{8}{y} = \frac{y}{31}$ $y = 2\sqrt{62}$

$\frac{23}{z} = \frac{z}{31}$ $z = \sqrt{713}$

7.



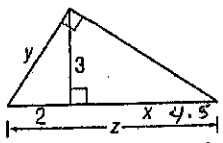
$\frac{19}{x} = \frac{x}{6}$

$x = \sqrt{114}$

$\frac{6}{y} = \frac{y}{25}$ $y = 5\sqrt{6}$

$\frac{19}{z} = \frac{z}{25}$ $z = 5\sqrt{19}$

8.



$z = 6.5$

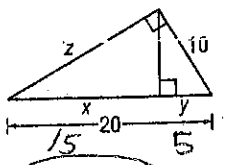
$\frac{2}{3} = \frac{3}{x}$

$2x = 9$

$x = 4.5$

$\frac{2}{y} = \frac{y}{6.5}$ $y = \sqrt{13}$

9.



$\frac{y}{10} = \frac{10}{20}$

$20y = 100$

$y = 5$

$x = 15$

$\frac{20}{z} = \frac{z}{15}$ $z^2 = 300$ $z = 10\sqrt{3}$

10. **CIVIL ENGINEERING** An airport, a factory, and a shopping center are at the vertices of a right triangle formed by three highways. The airport and factory are 6.0 miles apart. Their distances from the shopping center are 3.6 miles and 4.8 miles, respectively. A service road will be constructed from the shopping center to the highway that connects the airport and factory. What is the shortest possible length for the service road? Round to the nearest hundredth.